

[0106] In FIG. 30, the first authoring application receives content updates for the document 2010. The second user has chosen to share content changes with other users and accordingly merged content updates into a master copy of the document 2010 (e.g., via one of the synchronization processes described above). A sync manager of the first authoring application obtained the updates from the master copy of the document 2010 by polling the device storing the master copy.

[0107] The user interface 2000 of the first authoring application displays an alert 2030 to the first user indicating the availability of the content update. In the example shown, a text box 2030 appears in the user interface 2000. In another embodiment, the second lock or text within the second lock can change color, pattern, or formatting. In another embodiment, an update counter increments when each new update is available.

[0108] The first user can choose to view/instantiate the changes made by the second user or to ignore the content updates. The first user can continue to edit any unlocked data units within the document 2010 while ignoring the content updates. In one embodiment, the first user must instantiate the content updates before merging her updates with the master copy. In FIG. 31, the first user authoring application to instantiate the content updates into the document 2010 displayed by the user interface 2000 of the first authoring application. Content changes made by the second user are now visible to the first user.

[0109] Embodiments of the disclosure may be implemented as a computer process (method), a computing system, or as an article of manufacture, such as a computer program product or computer readable media. The processes (programs) can be implemented in any number of ways, including the structures described in this document. One such way is by machine operations, of devices of the type described in this document. Another optional way is for one or more of the individual operations of the methods to be performed on a computing device in conjunction with one or more human operators performing some of the operations. These human operators need not be collocated with each other, but each can be only with a machine that performs a portion of the program.

[0110] The computer program product may be a computer storage media readable by a computer system and encoding a computer program of instructions for executing a computer process. The computer program product may also be a propagated signal on a carrier readable by a computing system and encoding a computer program of instructions for executing a computer process. The term computer readable media as used herein includes both storage media and communication media.

[0111] Those skilled in the art will appreciate that the disclosure may be practiced with other computer system configurations, including hand-held devices, multiprocessor systems, microprocessor-based or programmable consumer electronics, minicomputers, mainframe computers, and the like. The disclosure may also be practiced in distributed computing environments where tasks are performed by remote processing devices that are linked through a communications network. In a distributed computing environment, program modules may be located in both local and remote memory storage devices. Generally, program modules include routines, programs, components, data structures, and other types of structures that perform particular tasks or implement particular abstract data types.

What is claimed is:

1. A method for authoring a document at a first computing device, the method comprising:

at the first computing device, allowing a first unit of data of the document to be edited by a first user;

at the first computing device, when the first unit of data is edited, providing a first annotation on the document indicating that the document is being edited by the first user;

at the first computing device, sending a first message to a second computing device, the first message indicating that the first unit of data of the document is being edited;

at the first computing device, receiving a second message from the second computing device, the second message indicating a name of a second user that is editing a second unit of data of the document;

at the first computing device, setting a first lock on the second unit of data, the first lock on the second unit of data preventing the second unit of data from being edited at the first computing device;

at the first computing device, providing a second annotation on the document, the second annotation indicating that the second unit of data is being edited by the second user;

at the first computing device, receiving a third message from the second computing device, the third message indicating that updates are available for the document; and

at the first computing device, updating the second unit of data to incorporate changes to the second unit of data received in the third message.

2. The method of claim 1, wherein the first annotation is displayed on the document when the first user moves a cursor to the first unit of data.

3. The method of claim 1, wherein the first annotation comprises a name tag, the name tag indicating a name of the first user.

4. The method of claim 1, further comprising setting a second lock on the first unit of data when the first unit of data is edited, the second lock preventing the first unit of data from being edited by anyone other than the first user.

5. The method of claim 4, further comprising the first message indicating that the second lock has been set on the first unit of data.

6. The method of claim 4, wherein the second user is an owner of the second lock.

7. The method of claim 1, further comprising the first message including a name of the first user.

8. The method of claim 1, further comprising the second annotation including a nametag, the nametag indicating a name for the second user.

9. The method of claim 8, wherein the nametag identifies the second user by color.

10. The method of claim 1, further comprising at the first computing device, displaying an alert to the first user when updates are available for the document.

11. The method of claim 10, wherein the alert is a visual alert.

12. The method of claim 11, wherein the alert comprises a text box on a user interface of the first computing device.

13. The method of claim 1, wherein updating the second unit of data to incorporate changes to the second unit of data